

List of claims

1 - 20. (cancelled)

21. (previously presented) A hydraulic system comprising:

a source of high pressure fluid;

a low pressure reservoir;

a fuel injector;

an engine compression release brake;

a control valve having a valve member that is movable along a line to stop at one of a first position, a second position and a third position, and being fluidly positioned between said source of high pressure fluid, said low pressure reservoir, said fuel injector and said engine compression release brake.

22. (previously presented) The hydraulic system of claim 21 wherein said third position is located between said first position and said second position;

said fuel injector and said engine compression release brake being fluidly connected to said low pressure reservoir, but fluidly disconnected from said source of high pressure fluid, when said valve member is in said third position.

23. (previously presented) The hydraulic system of claim 22 wherein said fuel injector is fluidly connected to, but said engine compression release brake is fluidly disconnected from, said source of high pressure fluid when said valve member is in said first position; and

said engine compression release brake is fluidly connected to, but said fuel injector is fluidly disconnected from, said source of high pressure fluid when said valve member is in said second position.

24. (previously presented) The hydraulic system of claim 23 wherein said engine compression release brake is fluidly connected to said low pressure reservoir when said valve member is in said first position; and

said fuel injector is fluidly connected to said low pressure reservoir when said valve member is in said second position.

25. (previously presented) The hydraulic system of claim 23 including at least one biaser operably coupled to bias said valve member toward said third position.

26. (previously presented) The hydraulic system of claim 23 including first and second solenoid coils operably coupled to said valve member and being arranged in series in an electrical circuit; and

said valve member being attracted to said first solenoid coil and repulsed by said second solenoid coil when electric current flows in one direction through said electrical circuit; and

said valve member being repulsed by said first solenoid coil and attracted to said second solenoid coil when electric current flows in an opposite direction through said electric circuit.

27. (previously presented) The hydraulic system of claim 26 wherein said valve member includes a first permanent magnet adjacent said first solenoid coil; and

said valve member includes a second permanent magnet adjacent said second solenoid coil.

28. (previously presented) The hydraulic system of claim 21 wherein said valve member includes an internal passage disposed therein.

29. (previously presented) The hydraulic system of claim 28 wherein said valve member includes opposite ends that are exposed to fluid pressure in said internal passage; and said internal passage is fluidly connected to said low pressure reservoir.

30. (previously presented) A method of operating a hydraulic system, comprising the steps of:

connecting a source of high pressure fluid, a low pressure reservoir, a fuel injector and an engine compression release brake to a control valve;

activating said fuel injector at least in part by moving a valve member of said control valve along a line to a first position that fluidly connects said fuel injector to said source of high pressure fluid;

activating said engine compression release brake at least in part by moving said valve member along said line to a second position that fluidly connects said engine compression release brake to said source of high pressure fluid; and

deactivating said fuel injector and said engine compression release brake at least in part by moving said valve member along said line to a third position that fluidly connects said fuel injector and said engine compression release brake to said low pressure reservoir.

31. (previously presented) The method of claim 30 including a step of biasing said linear control valve toward said third position.

32. (previously presented) The method of claim 30 wherein said step of moving a valve member to a first position includes a step simultaneously pushing said valve member

with a first electrical actuator and pulling said valve member with a second electrical actuator;
and

said step of moving said valve member to a second position includes a step of simultaneously pulling said valve member with said first electrical actuator and pushing said valve member with said second electrical actuator.

33. (previously presented) The method of claim 32 including a step of wiring said first and second electrical actuators in series on a single electrical circuit; and

said first step of energizing includes a step of supplying current to said single electrical circuit in a first direction; and

said second step of energizing includes a step of supplying current to said single electrical circuit in a second direction that is opposite to said first direction.

34. (previously presented) The method of claim 30 including a step of biasing said control valve toward said third position, which is a middle position;

said step of activating said fuel injector includes a step of magnetically moving said valve member in a first direction away from said middle position; and

said step of activating said engine compression release brake includes a step of magnetically moving said valve member in a second direction away from said middle position.

35. (previously presented) The method of claim 30 including a step of pressure balancing said valve member at least in part by exposing opposite ends of said valve member to pressure in an internal passage disposed in said valve member.

36. (currently amended) An engine comprising:
an engine housing defining a plurality of cylinders;

a hydraulic system comprising:

a source of high pressure fluid;

a low pressure reservoir;

a fuel injector;

an engine compression release brake;

a control valve having a valve member that is movable along a line to stop at one of a first position, a second position and a third position, and being fluidly positioned between said source of high pressure fluid, said low pressure reservoir, said fuel injector and said engine compression release brake;

a, the hydraulic system according to claim 21 being connected to said engine housing and including a fuel injector for each of said cylinders and an engine compression release brake for at least a portion of said cylinders, and including a control valve for each of said cylinders having both a fuel injector and an engine compression release brake; and

each said control valve having a valve member movable along a line between a first position at which one fuel injector is fluidly connected to said source of high pressure fluid, a second position at which one engine compression release brake is fluidly connected to said source of high pressure fluid, and a third position at which said fuel injector and said engine compression release brake are fluidly connected to said low pressure reservoir.

37. (previously presented) The engine of claim 36 wherein each said control valve includes at least one biaser operably positioned to bias said valve member toward said third position; and

each said control valve including at least one electrical actuator operably coupled to move said valve member.

38. (previously presented) The engine of claim 37 wherein said hydraulic system

is fluidly connected to an engine lubrication system.

39. (previously presented) The engine of claim 38 wherein said engine compression release brake includes a piston operably coupled to an engine brake valve member.

40. (previously presented) The engine of claim 39 wherein each said fuel injector includes an intensifier piston.